Amendments to the Specification

Please replace paragraph [0005] with the following amended paragraph:

[0005] Ultrasonic testing devices for coiled tubing are known. US Pat. No. 5,303,592 incorporated herein in its entirety by reference, describes an ultrasonic apparatus and methods of use for inspecting ~~for~~ coiled tubing wherein coiled tubing is passed through a cylindrical test apparatus coupled to the coiled tubing while ultrasonic signals are transmitted into and returned from the coiled tubing. The success of ultrasonic testing of coiled tubing depends on the ability to transmit a signal from the ultrasound transducers to the coiled tubing. Water may be used to provide coupling between the ultrasonic transducers and the coiled tubing as described in US Pat No. 5,303,592. However, other fluids and debris in a borehole environment can contaminate and dirty water, which interferes with its ability to relay the signals transmitted from the ultrasonic transducers and returned from the coiled tubing.

Please replace paragraph [0020] with the following amended paragraph:

[0020] Referring to **FIG 3**, a measurement apparatus **50** is shown that comprises a coupling material **56** shown as an elastomeric element in a cavity **57** in a housing **51**. Alternative coupling materials include fluids, bladders or other compliant material capable of transmitting an acoustic signal. Typically housing **51** and coupling material **56** may by cylindrical or torroidal in shape. A tubular, such as coiled tubing **14**, passes through an axial bore in housing **51** and coupling material **56**. Securing mechanisms **52** adjacent to ultrasonic transducers or probes **53** restrict the probes **53** from movement in the radial direction relative the coiled tubing **14** but permit movement in the axial direction. In the embodiment illustrated, two ultrasonic transducers or probes are shown, although the invention is applicable with a single or any number of transducers or probes. Piston **54** may be used to

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compress (as shown at **60**) coupling material element **56** as shown in **FIG 4** in the axial direction of the coiled tubing **14** thereby increasing contact pressure **65** at the coupling material/coiled tubing interface. Piston **54** may be hydraulic or pneumatically operated with fluid or gas being provided to activation cavity **57** via input port **58**. Alternatively a solenoid operated hydraulic valve **59** (~~not~~ shown in dashed line) may be used to permit fluid or gas to enter activation cavity **57** via port **58** to compress coupling material **56**. If the ~~contract~~ contact pressure at the coupling material/coiled tubing interface is too great, then normal force on the coiled tubing at the coupling material/coiled tubing interface may translate into extra frictional drag and may cause measurement apparatus **50** grab onto the coiled tubing. In this situation, decreasing the compression force placed axially on the elastomeric element by the piston will decrease the contact pressure at the elastomeric element/coiled tubing interface. If the ~~contract~~ contact pressure at the coupling material/coiled tubing interface is too low, then the acoustic coupling necessary for transmission of a signal from transducer **53** to coiled tubing **14** would not be achieved. Thus a method is needed ~~to~~ that permits acoustic coupling while avoiding frictional drag.

Please replace paragraph **[0021]** with the following amended paragraph:

[0021] The present invention provides a method of inspecting a tubular comprising contacting a tubular with a coupling material, transmitting a signal, receiving a returned signal and releasing the contact of the coupling material with the tubular ~~is provided~~. Referring to **FIGs 3** and **4** to illustrate this method, coiled tubing **14** moving through the measurement apparatus **50** is shown. Piston **54**, in response to a signal, compresses elastomeric element **56** to contact coiled tubing **14**. Ultrasonic transducer **53** transmits an acoustic signal that travels through elastomeric element **56** and into coiled tubing **14**. Reflected acoustic ~~signal~~ signals are returned and received by transducer **53**. Then contact of elastomeric element **56** is released from the coiled tubing **14** by reducing or removing the compression asserted on elastomeric element **56** by piston **54**. It should be noted that coiled

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tubing **14** continues to move uniformly through the measurement apparatus **50** as the ~~contract~~ contact is made, signal transmitted, signal received and ~~contract~~ contact released. Coupling material **56** flexes and deforms to accommodate the discontinuous relative motion of the coiled tubing **14** through the measurement apparatus **50**. This method provides the advantage of accomplishing acoustic coupling between the transducer and coiled tubing while avoiding the friction generated by continuous contact of an elastomeric element with the coiled tubing as it is moved through a measurement apparatus. Additional advantages include a much smaller drag in the coiled tubing, increase wear life for coupling material, and no need for a lubrication fluid between coupling material and coiled tubing.

Please replace paragraph **[0022]** with the following amended paragraph:

[0022] In further embodiments, this method may be repeated as the coiled tubing **14** ~~is move~~ moves through the measurement apparatus **50** to provide measurements along the coiled tubing ~~a~~ at various locations. In some embodiments, the steps of contacting the coiled tubing with a coupling material, transmitting a signal, receiving a signal and releasing contact of the coiled tubing by the coupling material may be repeated at a high rate (10 – 100 Hz). In this manner, frequent ultrasonic measurements may made to determine coiled tubing parameters without generating the frictional drag created by continuous contact of an elastomeric element with the coiled tubing.

Please replace paragraph **[0024]** with the following amended paragraph:

[0024] The signal transmitted by an ultrasonic transducer **53** passes through the elastomeric element **56** into coiled tubing **14** and is reflected from the inner surface of the coiled tubing back towards the transducer **53**. The ultrasonic transducer receives the reflected signal and generates an electrical output signal. The electrical signal output by transducer **53** from a received ultrasonic signal will have several sections. The initial portion of the output

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signal contains repeated reflections from interfaces within ~~UT~~ the ultrasonic transducer itself. The next section of the output signal contains a reflection from the transducer/elastomeric element interface. Following this would be the section of signal containing the first reflection from the elastomeric element/coiled tubing interface. The next section of signal contains the repeated reflection "ringing" of the reflected signals between the inner and outer walls of the coiled tubing. This "ringing" section of signal is of particular relevance in determining the shape, outer diameter and wall thickness. In addition when determining the wall thickness, the portion of the signal ~~from~~ generated from the elastomeric element/coiled tubing interface is of interest. Electronic time correction windows or "gates" on the transducers' operation may be optionally used to restrict the collection and processing of signal information to a specified time window.

Please replace paragraph **[0027]** with the following amended paragraph:

[0027] In a further embodiment, a control algorithm, typically embodied in software, is used which uses the ultrasonic signal information as an indicator to monitor the frictional drag that acts on the coiled tubing. In response to a loss or significant reduction in received ultrasonic signal, the control algorithm can trigger the solenoid operated hydraulic valve to open further to produce greater ~~contract~~ contact pressure on the coiled tubing. In response to a significant increase in frictional drag, the control algorithm can trigger the solenoid operated hydraulic valve to close further to produce lesser ~~contract~~ contact pressure on the coiled tubing. Monitoring of frictional drag can be done by monitoring coiled tubing parameters such as injector motor pressure, injector head running weight, or coiled tubing reel back tension measured and recorded in the SIMs or memory as shown in **FIG 2.**

Please replace paragraph **[0028]** with the following amended paragraph:

[0028] The expected travel time of the reflected signal from the elastomeric

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element/coiled tubing interface may be useful in setting a first gate to preclude ~~signal~~ signals from the initial sections of the output signal. A control algorithm, typically embedded in software, can be used to set a first gate to ignore the initial signals received and a second gate at the first large signal after the first gate, the second gate corresponding to the reflection from the elastomeric material/coiled tubing interface. This signal may be used to confirm the distance from the ultrasonic transducer to the outer surface of the coiled tubing by multiplying the speed of sound in the elastomer by the signal time. This distance can be output and stored in an electronic format, such as a computer memory.

Please replace paragraph [0031] with the following amended paragraph:

[0031] In an embodiment of the present invention, a method of monitoring whether excess friction is being generated by contact of the measurement apparatus **50** with the coiled tubing **14** is provided and relieving that excess friction is provided. One indication of the movement of coiled tubing into and out of the wellbore can be measured by the movement of the injector head **16** as an indication of the rate of injection. Another indication of the movement of the coiled tubing can be measured by the sensing the rotation of the ~~CT~~ coiled tubing reel **10** as an indication of the rate of unspooling. A discrepancy between these two measurements would indicate excessive contact pressure on the coiled tubing creating friction that is slowing coiled tubing between the reel and the injector.

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